

Figure 1

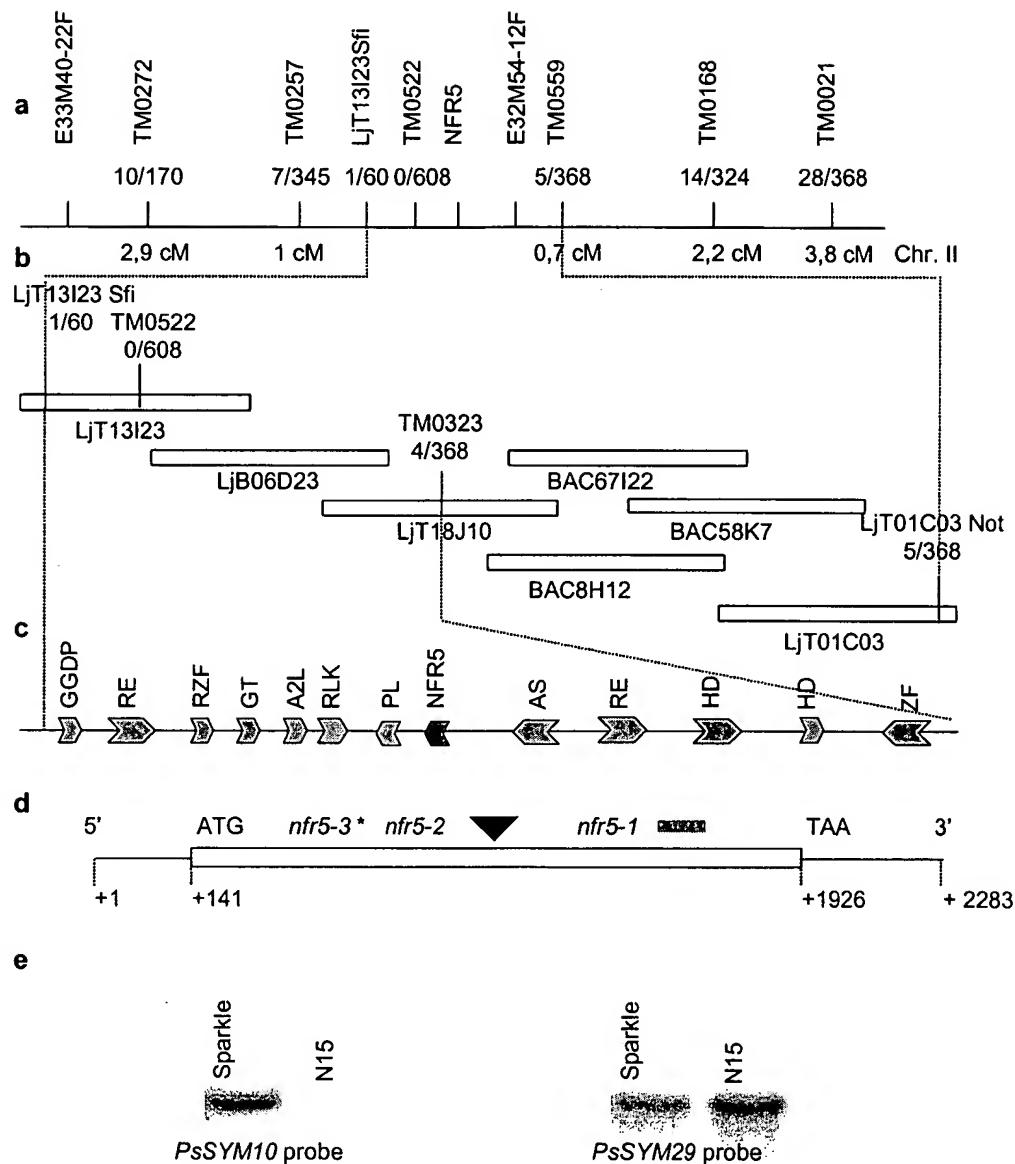
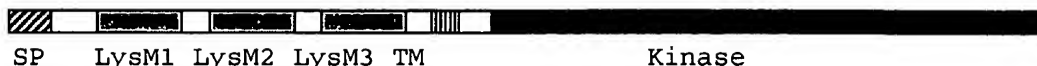


Figure 2

a



b

MAVFFLTSGSLSLFLALTLLFTNIAA	SP
RSEKISGPDFSCPVDSPSPSCETYVT	51 aa
* YTAQSPNLLSLTNISDIFDISPLSIARASNIDAGKDKLVPGQVLLVP	LysM1
VTGCGAGNHSSANTS	113 aa
YQIQLGDSYDFVATTLYENLTNWNIVQASNPGVNPYLLPERVKVFP	LysM2
LCRCPSKNQLNKGIQYLIT	180 aa
YVWKPNNDNVLVS AKFGASPADILTENRYGQDFTAATNLPILIP	LysM3
VTQLPELTQPSSNGRKSSIHLL	246 aa
VILGITLGCTLLTAVLTGTLVYVYC	TM
RRKKALNRTASSAETADKLLSGVSGYVSKPNVYEIDEI	KD
I MEATKDFSDECKVGESVYKANIEGRVVAVKKIKEGGANEELKILQKV	
II III NHGNLVKLMGVSSGYDGNCFVLVYEYAENGSLAEWLFSKSSGTPNSLT	
IV V WSQRISIAVDVAVGLQYMHEHTYPRIIHRDITTSNILLDSNFKAKIA	
Via Vib NFAMARTSTNPMMPKIDVFAFGVLLIELLTGRKAMTTKENGEVVMLW	
VII IX KDMWEIFDIEENREERIRKWMDPNLESFYHIDNALS LASLAVNCTAD	
XI KSLSRPSMAEIVLSLSFLTQOSSNPTLERSLTSSGLDVEDDAHIVTS	
ITAR	595 aa

Figure 2

c

NFR5M1 52: YTAQSPNLLSLTNISDI~~FDISPLS~~IA~~RASNTID~~AGKDKLVE~~CGVLL~~VP:98
SYM10M1 52: YFARSPN~~ELSLTNISDI~~FDMS~~PLSIAKASNT~~ED~~EDDK~~LVE~~CGVLL~~IP:98
M.tM1 53: YRAQSPN~~ELSLTNISDI~~FNLS~~PLRIA~~KAS~~NT~~EA~~EDDK~~LIED~~QVLL~~VP:99
RiceM1 47: YRTQSPG~~ELDLGNISDI~~FGVSRALIAS~~ANKLTT~~EDGVLL~~ECQVLL~~VP:93

NFR5M2 114: YQIQLEDSYDFVATILMENLTNWNIVQASN~~PGVNP~~YLLBERVK~~VW~~VP:160
SYM10M2 114: YITKLG~~DNYSIT~~SYONL~~NYVEMENFN~~PNLSPNLL~~PEIK~~VWVP:160
M.tM2 115: YSHKQCDNE~~ELSLIT~~SYONL~~NYLFKNFN~~PNLSP~~TLPLD~~TKV~~S~~VP:161
RiceM2 109: YPIRPRD~~IEEGLAVIAFEN~~LD~~FMLEE~~NEPAAEA~~TRLEPWQ~~EVWVP:155
VolvoxM2 106: YITQPCD~~TEWAIAQR~~.RG..ITVDV~~IQSLN~~PGVNP~~EARLQV~~CQVIN~~MP~~:149
Pfam 1: YITVKK~~CDILWKIARR~~.VG..ISVSELK~~SLNGL~~SSDNL~~YVCOK~~LKIP:43

NFR5M3 181: YVWKPN~~DNVSLVSAK~~FGASPA~~DIITENRYC~~ODETA~~ATNL~~ILIP:224
SYM10M3 181: YVWQAND~~NVTRVSSK~~FGASQ~~VD~~MFTEN..N~~ONE~~TASTN~~VE~~ILIP:222
M.tM3 182: YVWQDN~~DNVTIVSSK~~FGASQ~~VE~~MTAEN..N~~HNE~~TASTN~~RSV~~LIP:223
RiceM3 176: YVWQEG~~DDSVSVS~~SALMN~~ASAANIAAS~~NGVAGN~~STFATG~~QEV~~L~~IP:219

d

	VII	VIII	IX
Cons	...DFG.....	APE.....	D.W..G
Smart 195:	KIAD FGLSR ..DLYSDD YYKVKGGKLP IRWMA PESLKEGKFTSKS SDVWSFG:248		
Arab 500:	KI ANFG VARILDEG DL DLQLTRHVEGTQGYLA PEYVENG VITSKLD VEAF FG:550		
NFR5 448:	KI ANF AMARTSTN.....	PMMPK I DVEAF	FG:472
SYM10 449:	KI ANF SMARTSTN.....	SMMPK I DVEAF	FG:473
M.t 450:	KI ANF GMARTSTN.....	SMMPK I DVEAF	FG:474
Rice 476:	KLSN FSLAKPAAMVD	AAATSS	DVEAF

Figure 3

Lotus 1: M VFFLSGLSLFLFLT LFLTNIAAREK S PDECPVDSPPSCETVYVYTA SPNLSL NISDIF ISEPLIARA: 79
Pea 1: M IFFLESSESLFLFLK VTNIF A QLS FSCPVDSPPSCETVYVYTA SPNLSL NISDIF ISEPLIARA: 79
M.t 1: MSAFFLESSESLFLFLVLL LTNISAX YSE FFCPVDSPPSCETVYVYTA SPNLSL NISDIF ISEPLIARA: 80

Lotus 80: SNID GRDKA QALLIPVTCGACM SANTSCLO GDS DFA TILNLTNNIVQASNEGVNFFLLPERKVI F:159
Pea 80: SNID D KLA E QALLIPVTCGCRNRX ANFYTHI GD T YNLTN VME NP PNLLPEIKVI:159
M.t 81: SNIE KLI DQILLIPVTCGCEKNA ANI ISI QGD F LIT YNLTN LFK NP PILLPLDTKVS:160

Lotus 160: PLFCPCPSKNQLKGI LITVWKPNVVS VSKFGASPA I ENRYG DFTATNL LIPVTLPE QPSSNGR:239
Pea 160: PLFCPCPSKNQLSGIHLITVW ANDNV RVSKFGAS F EN FTA TNV LIPVTLPIV QPSSNGR:237
M.t 161: PLFCPCPSKNQLKGIHLITVW DNDNV VSKFGAS E AEN H FTA TNRSVLLIPVTSLPK QPSSNGR:238

Lotus 240: K S IHLVILGILG TLLTAVLTGLVYVYCRKKNLNRAS ETADKLLSGVSGYVSKPNVYE DEIME TKDPS:318
Pea 238: KNST KPIFI GILG VVVLTV LVVYQ K LNR SL ETADKLLSGVSGYVSKPNVYEMD IME TM SE:317
M.t 239: KSS N I I GILG ILVLT LVVYQ K LNR S ETADKLLSGVSGYVSKPNVYE D INE CT S:318

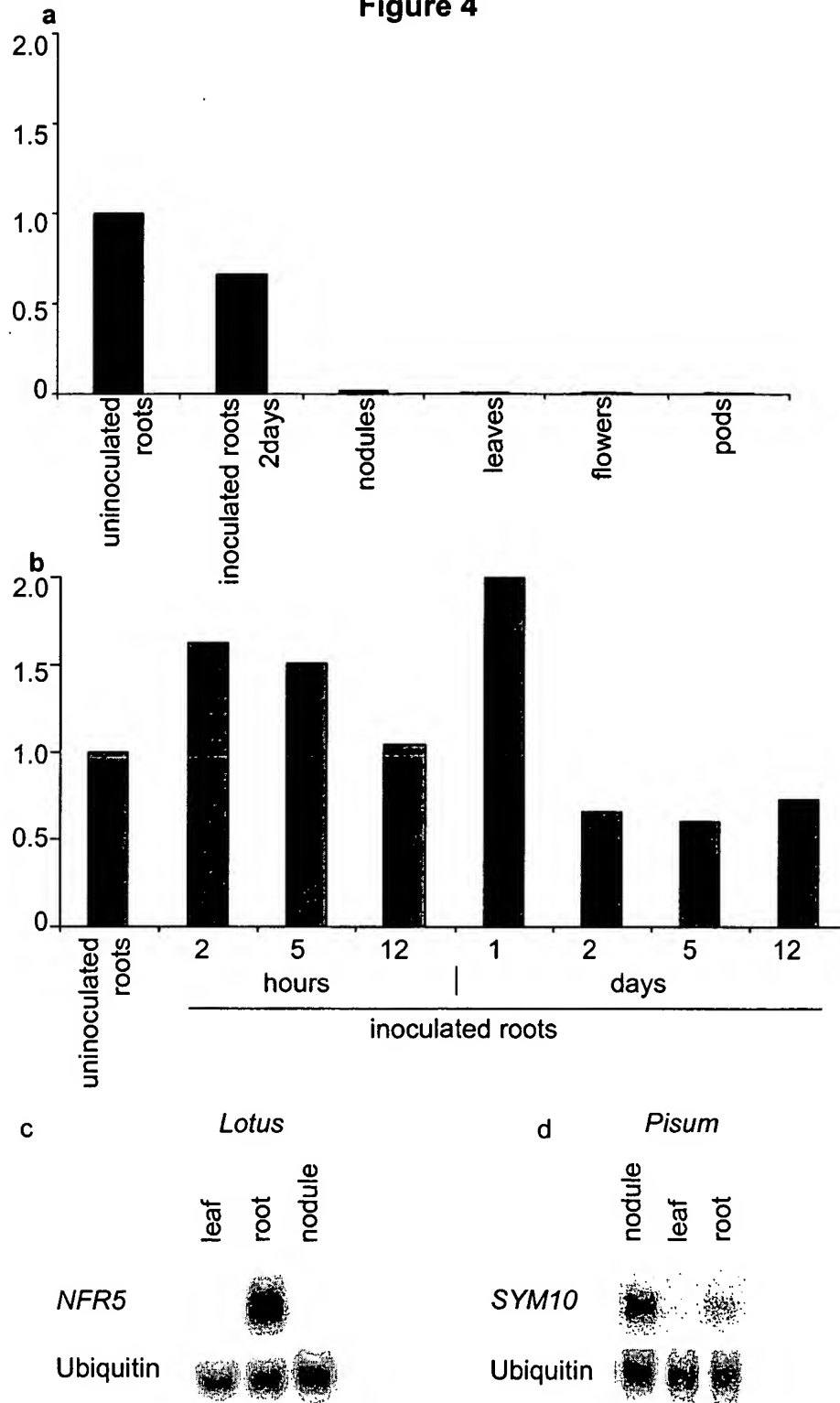
Lotus 319: ECKVGEVYKANI GRV AVKKI KEGCNEELKILQKVNHNGLVLMGVSSY GNCFLVVEYAENGSLNEMLFSK SGT:398
Pea 318: CK GESVYKANI GRV AVKKIK A EELKILQKVNHNGLVLMGVSS EGNCFVVEYAENGSLDEWLFS LS:396
M.t 319: CK GESVYKANI GRV AVKKIK A EELKILQKVNHNGLVLMGVSS GNCFLVVEYAENGSLNEMLFS SGT:397

Lotus 399: PM SLTWSQRIS ANDVA GLQYMHETYPRIIHRDITTSNILL SNFKAKIANFAMARTSTN MPMKIDVFAFGVLL:475
Pea 397: N SLTWSQRITVA DVA GLQYMHETYPRIIHRDITTSNILL SNFKAKIANFAMARTSTN MPMKIDVFAFGVLL:476
M.t 398: N SLTWSQRIT ANDVA GLQYMHETYPRIIHRDITTSNILL SNFKAKIANFAMARTSTN MPMKIDVFAFGVLL:477

Lotus 476: TELLTGKA TT ENGEVW LKWD M LFD E NREES IRKMDP L E FY IDNALS LSLAVNCTADKSLSRP MAET:555
Pea 477: TELLTG KATTTMENGAV LKWD M LFD E NREES RKMDP L E FY IDNALS LSLAVNCTADKSLSRP AET:556
M.t 478: TELLTG KA TT ENGEVW LKWD M LFD E NREES RKMDP L E FY IDNALS LSLAVNCTADKSLSRP AET:557

Lotus 556: VLSLSLTCOSSNPLERSLTS GLDDEDDAHVTSIAR:595
Pea 557: VLA LSLTCOSSS PLERSLTS GLDDEA HWVTSIAR:594
M.t 558: VLLSLTLCOPSS PLERSLTS GLDDEA HWVTSIAR:595

Figure 4



a **Figure 5**

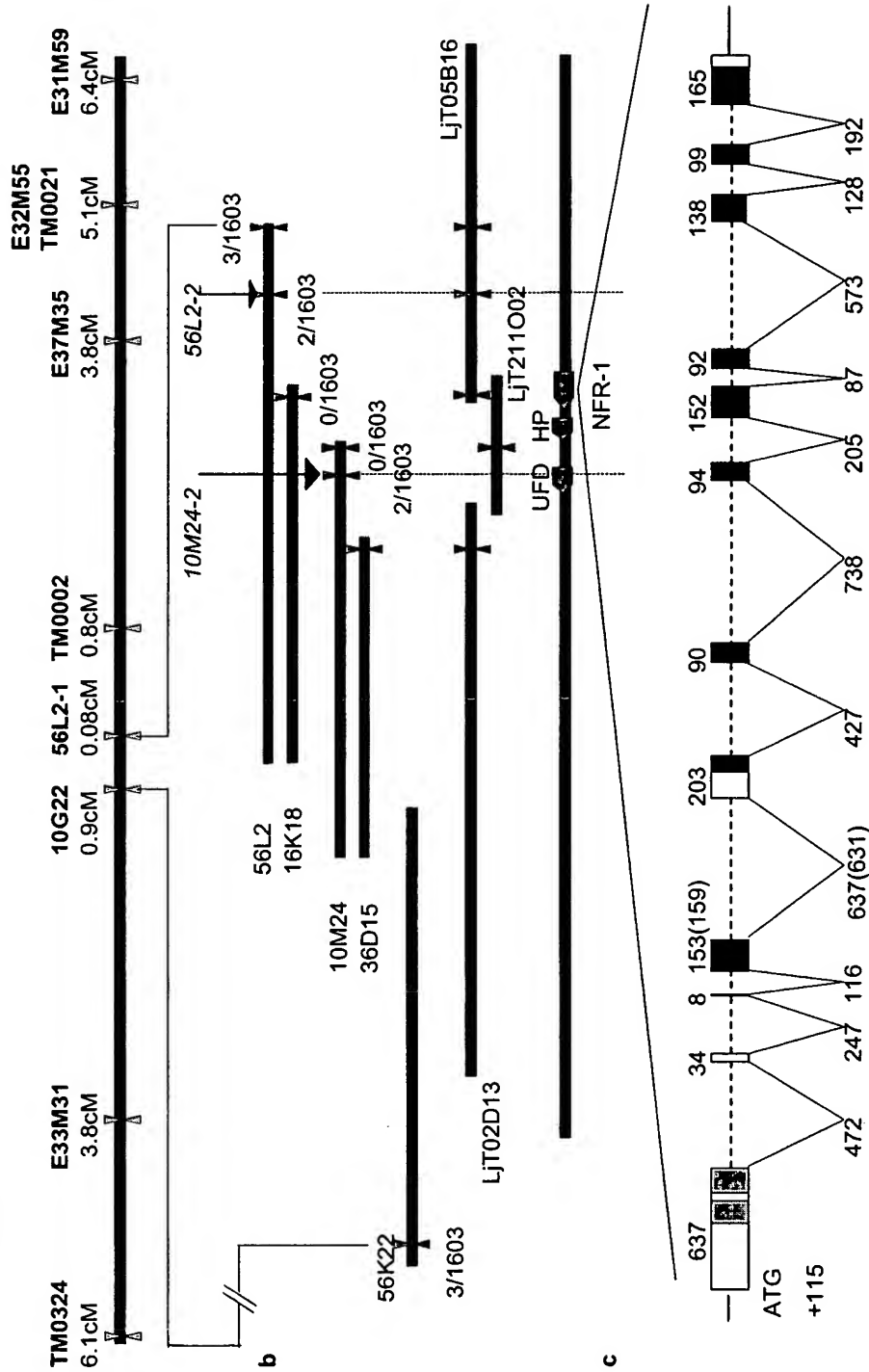


Figure 6

a

MKLKT GLLLF FILLLGH	SP
VCFHV ESNCL KGC DLALASY YI LPG VFI LQ NIT TFMQS EIVSS NDAIT S	
YNKDK ILNDI NIQSF QRLNI PFPCDCIGGEF LGHV F E	103
<u>YSASKGDTYETIANLYYANLTTV DLLKR FNSYDPK NIPVNAKVNVT</u>	LysM1
VNCSCGNSQV SKDYG LFIT	168
<u>YPIRPGDTLQDIANQSSLDAGLI QSFNP SVNFSKDS GIAFI P</u>	LysM2
GRYKNGVYVP LYHR	224
TAGLA SGAAVGISIAGTFVL LLLAF CMY V	TM
RYQKK EEEKA KLPTD ISMAL STQD (GN) ASSSA EYETS GSSGP GTASA T	
GLTSI MVAKS MEFSY QELAK ATNN	322 (3 24)
FSLDN KIGGGFGAVYYAEL RGKKTAIKKMDVQASTFELCELKVLTHV	
I II I II	
HHLNLVRLIGYCVGE SLFLV YEHIDNG NLGQY LHGSG KEPLPWSSRVQIA	
IV V VIa	
LDAARGLEYIHEHTVP VYIHRDVKSANILIDKNLRG KVADFGLTKLI EVG	
VIa VIb VII	
NSTLQ TRLVGTFGYMPPEYAQYGDISP KIDVYAFGVVLFE LISAK NAVLK T	
VII I * IX	
GELVA ESKGL VALFE EALNK SDPCDALR KLVDPLGEN YPIDS VLKIA QLG	
*	
RACRDNPLLRPSMRSL WALM TLSSL TEDCDDESSY ESQ TLINL LSVR*	
XI	

b

SMART0257	YTKKEDTLSSARRGIS-S-DILELNIIDNLQNGCKIP-
NFR1M1	1YSASKGDTYETIANLYYANLTTV DLLKR NSYDPK NIPVNAKVNVT -149
A21630-M1	YSRQBDTARVAISLVA NLMESLQANPFPANEILSFTLRNLV-151
SMART0257	YTVKEDTLSSARRGIS-S-DILELNIIDNLQNGCKIP-
NFR1M2	1YPIRPGDTLQDIANQSSLDAGLI QSFNP SVNFSKDS GIAFI P-208
A21630-M2	YPLRFGDTLQDIANQSSLDAGLI QSFNP SVNFSKDS GIAFI P-211
BAB89226-M2	YAVQIDTARVAISLVA NLMESLQANPFPANEILSFTLRNLV-212
VolvoxM	4YTIQBDTARVAISLVA NLMESLQANPFPANEILSFTLRNLV-85

Figure 7

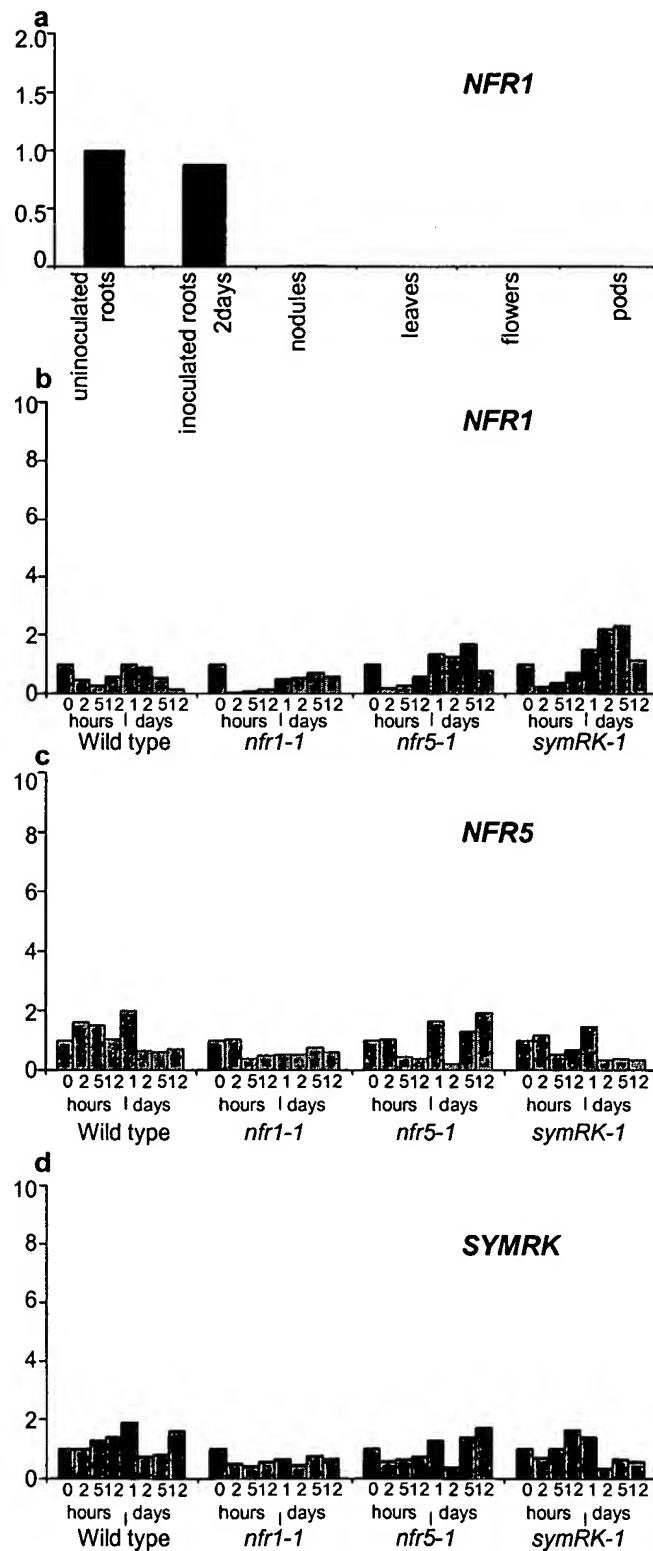


Figure 8

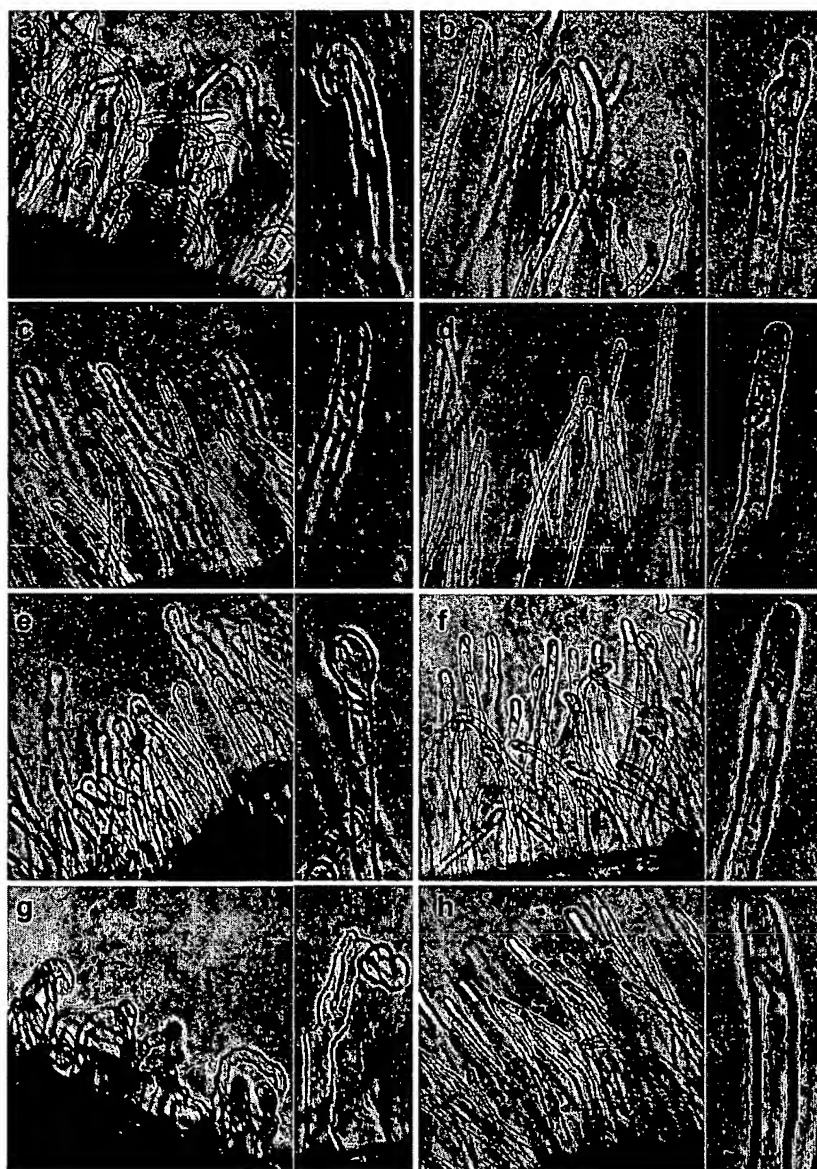
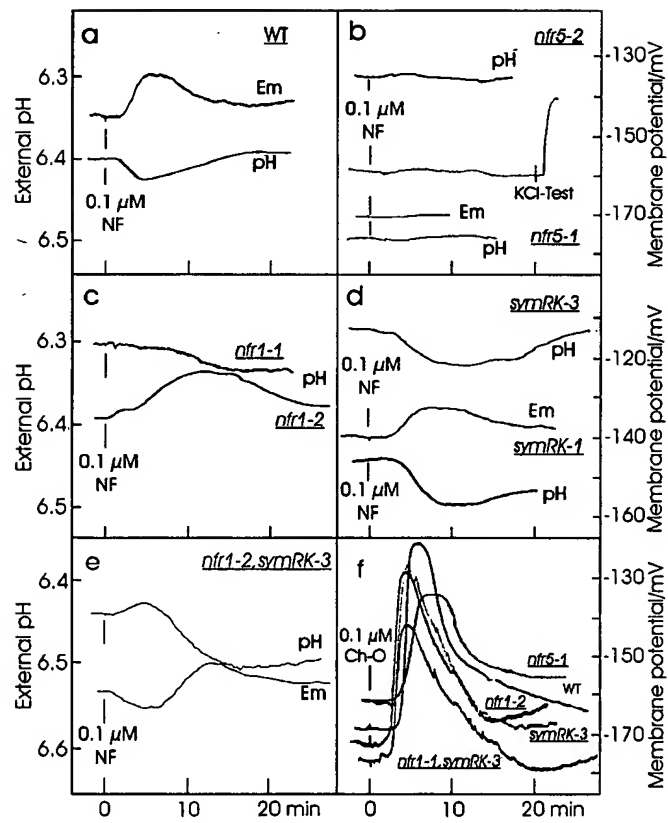


Figure 9



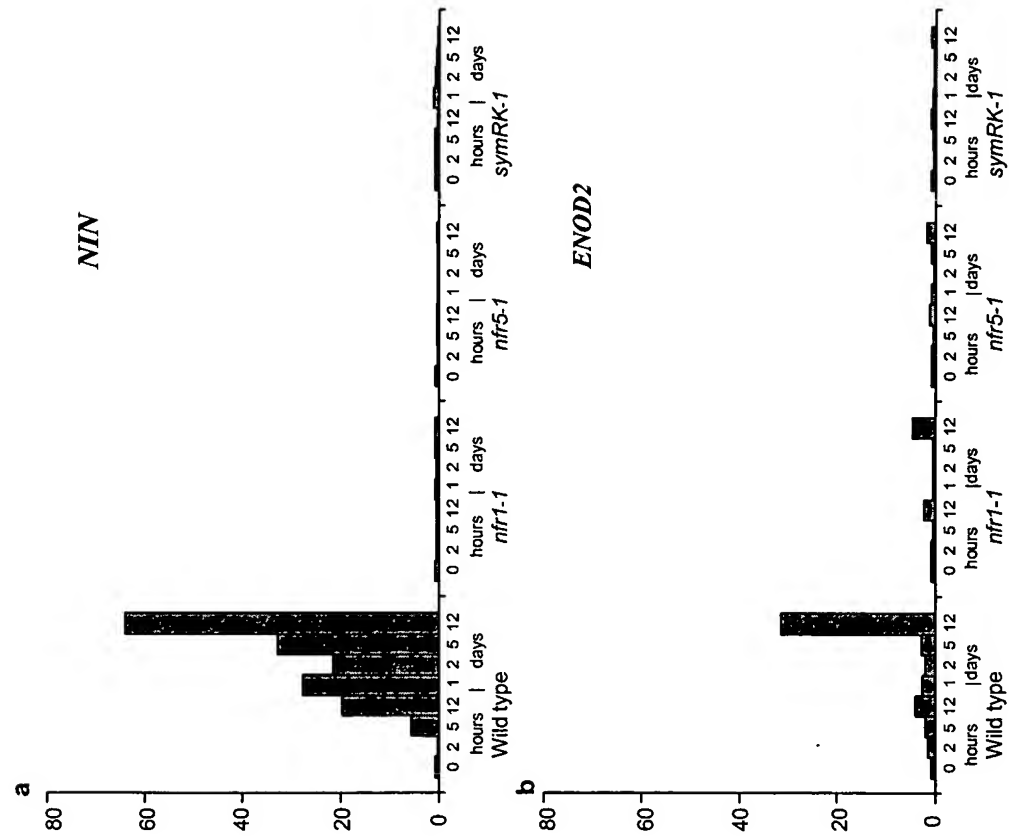


Figure 10

Figure 11

NFR1 1: **NK...** **LKTG** **LILFF** **LILGHVCFHVESNCLKG** **C...** **D...** **LALASYIL** **PGVFILQNTTTFMQSEIVSND** **AITSYNKDKILND** **INIQSFQRL**
NFR5 1: **MAVFF** **LTSGL** **SLFLAT** **LFTNIAARSEKISCPDFSCPV** **SPSPSCETV** **TYTAQSENLLSLTNI** **SDIFDISPLSIARAS** **NIDACK** **DKLVPG** **QVL**

NFR1 85: **NI** **FP** **CD** **CIGGEFLGHVFEYSASKGDTYETIANLYANLTTVDLLKRFN** **SYDEKNI** **PNVAKVNTVNC** **SGNS** **QVSKDYGLFITTYPIR** **PCDTLQDIAN**
NFR5 96: **LVE** **VTCCGAC** **NHSSANT** **SYOIQLGDSYDFVATTIYENLTNNWNI** **VOASNPGVNE** **PILLPERVKVFFLFCRC** **PSKNQLNKGIQYLITYVVKEND** **NVSLVSA**

NFR1 183: **QSSLDAGLIQSFN** **PSVNF** **SKDSGI** **AFIPGRYKNGVYVPLYHRTAGLASAAVGI** **SIAGTFVLLLLAF** **CMXVRYQKKEEKAKLPTDISMAL** **STQDASS**
NFR5 195: **KFGASPADIL** **TENRYGQDE** **TAATNL** **PILIP** **VT...** **QLPELTQPS** **SNRKS** **SIHLLVILGITL** **GCITLL** **TAVLTGTLVYVYCRKKA** **LN** **RTASS**

NFR1 281: **SABYETSGSGPGTASATGLTSIMVAKSMEFSYQELAKATNNFSLDNKI** **COGGFGAVYAE** **ELRGKKTAI** **KRM** **MDVQASTEFL** **CELKVLTHVH** **LNIVRLIG**
NFR5 283: **ATADKLLSG** **...** **VSGY** **...** **VSKPNVYEIDEIM** **BAIKDF** **SECKVGES** **...** **VYKANIEGRVAV** **KKIK** **KEGGANE** **...** **ELKILQKVN** **HGNLVKLMG**

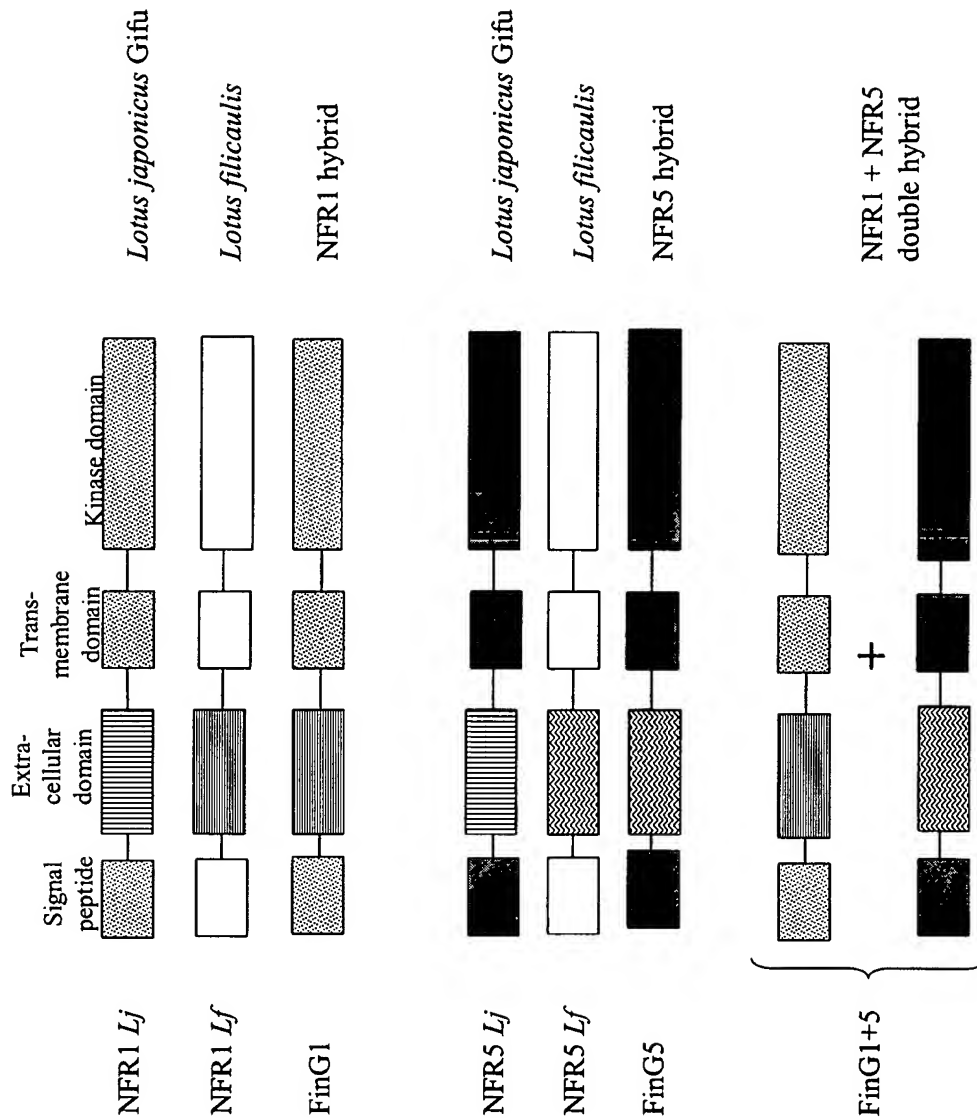
NFR1 381: **YC** **VEG** **SFLVVEHIDNGNL** **GOYLHG** **SGKEP** **LPWSSRVQIALDAARGLE** **YTH** **HEHTVPVYI** **HRDVK** **SNILID** **KNLRGKVAD** **FGLTKLIEVGN** **STLQ**
NFR5 367: **VSSGYDCN** **QFLVYEYAENG** **SLAEWL** **FSKSSGTPNS** **LTWSORISIAVDVAVGLQ** **WHEHTYPRII** **HRDITTSN** **ILDDSTFKAKIANFAMAR** **...** **TST** **...**

NFR1 476: **TRLVGTFGYMPPEYAQYGDISP** **KIDVYAFGVVL** **FELISAKNAVL** **KTGELVAESKGLVALFEEALNKSDPCDAIRKL** **VDPRLGENY** **PIDS** **V** **KIAQ** **IGR**
NFR5 459: **...** **NP** **...** **MM** **PKIDVFAFGVLL** **IELTGRKAMTTKENG** **EVVWLKDW** **WEI** **FDIEENR** **...** **BERIRK** **WMDPN** **LESFY** **HIDNAL** **SLASLAV**

NFR1 574: **ACTRENPLIRPSMRSL** **VVALMTL** **SSLTEDCDD** **ESSYES** **...** **...** **QTLINLLSVR**
NFR5 540: **NCTADKSLSRPSMAEII** **LSLSFL** **TQSSNP** **TLERSLT** **SSGLDVEDDAHIVTSITAR**

Figure 12

Protein domain structure of *Lotus japonicus* and *Lotus filicaulis* NFR1 and NFR5 proteins and of the hybrid proteins



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